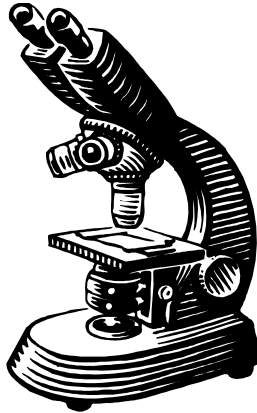


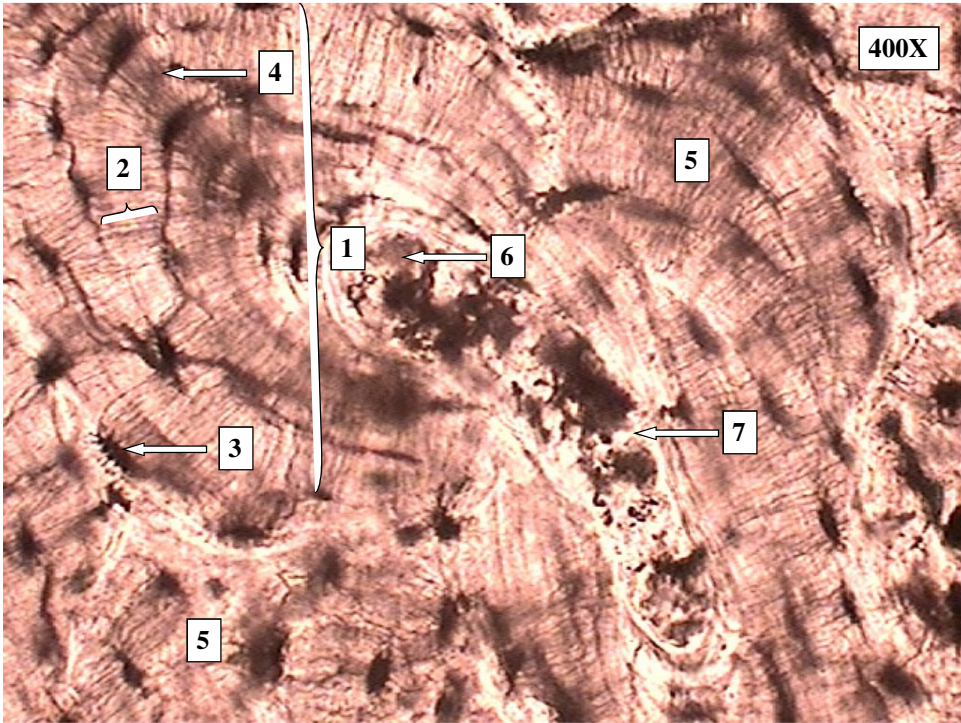
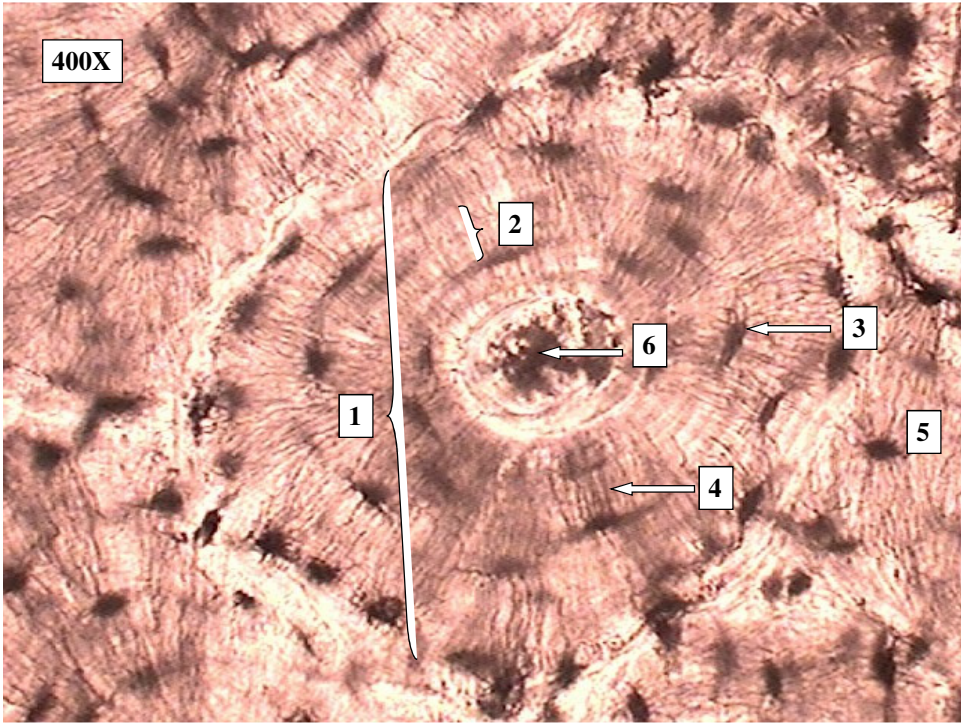
Bio & 241 A&P 1

Unit 2 / Lab 4



Histology Slides for Bone Tissues

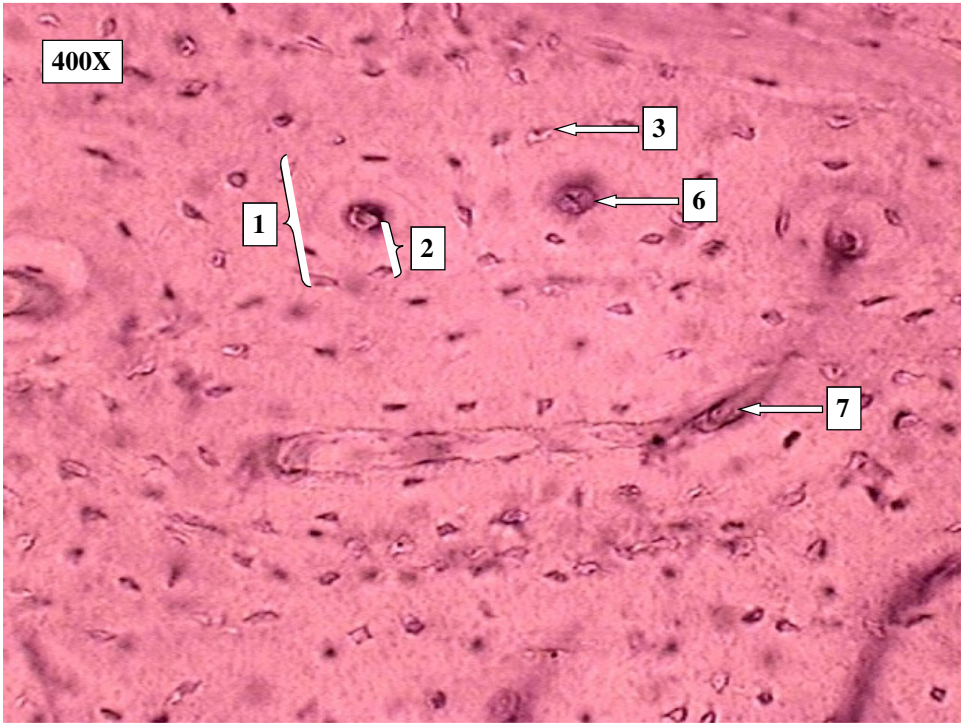
- **Slides are presented in order of magnification if different views are presented.**
- **As you view the following slides make sure you can accomplish these goals:**
 - 1. Can you identify the tissue observable on the slides?**
 - 2. Can you identify the specific structures or layers indicated by the numbered arrows or brackets?**
- **At the end of a sequence, you will find the answers to the above for each slide.**

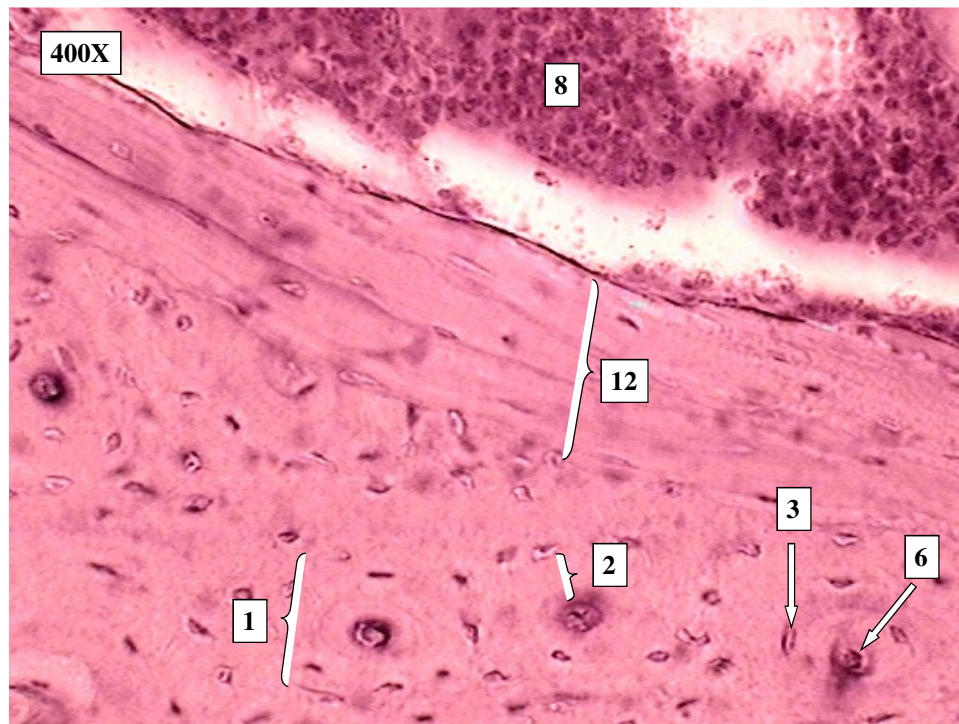


Slides 3-4 Compact Bone

1. **Osteon**, the basic structural and functional unit of compact bone.
2. **Concentric Lamellae**, rings of bone matrix surrounding a **Central Canal or Haversian canal**
3. **Lacuna**, space in matrix where osteoblasts or osteocytes are found.
4. **Canaliculi**, passageways in the matrix for cytoplasmic extensions between osteocytes
5. **Interstitial Lamellae**, remnants of osteons whose matrix has been partly recycled by osteoclasts. These lamellae fill in the spaces between osteons.
6. **Central Canal or Haversian Canal**, passageway for blood vessels that provide nutrient to osteocytes.
7. **Perforating Canal or Volkmann's Canal**, passageway for blood vessels that runs perpendicular to Central Canals. Conveys blood vessels to deeper osteons.





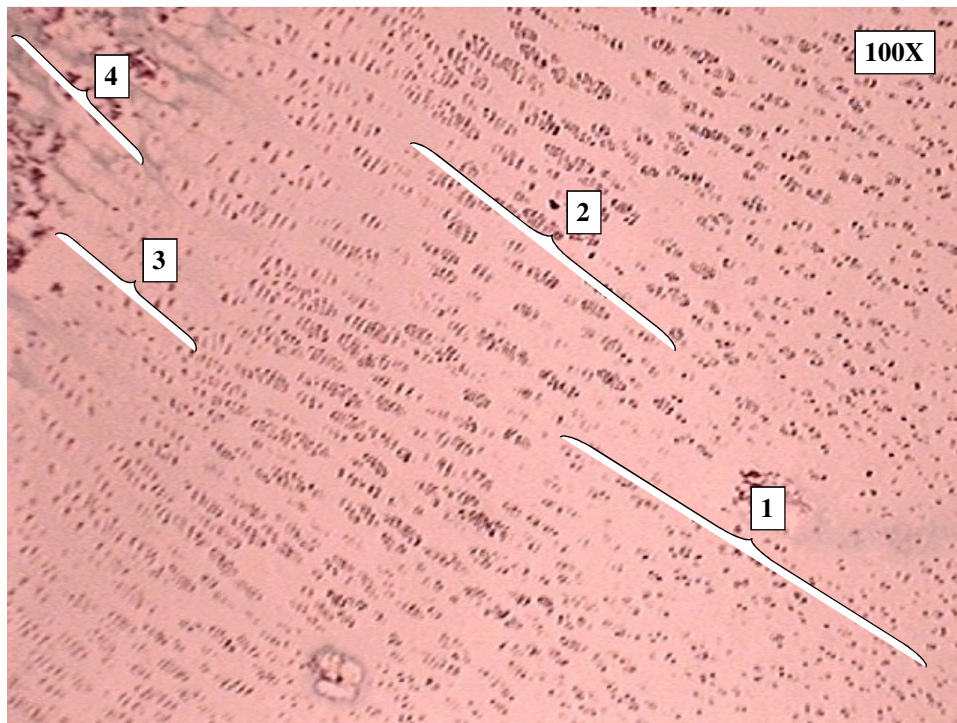


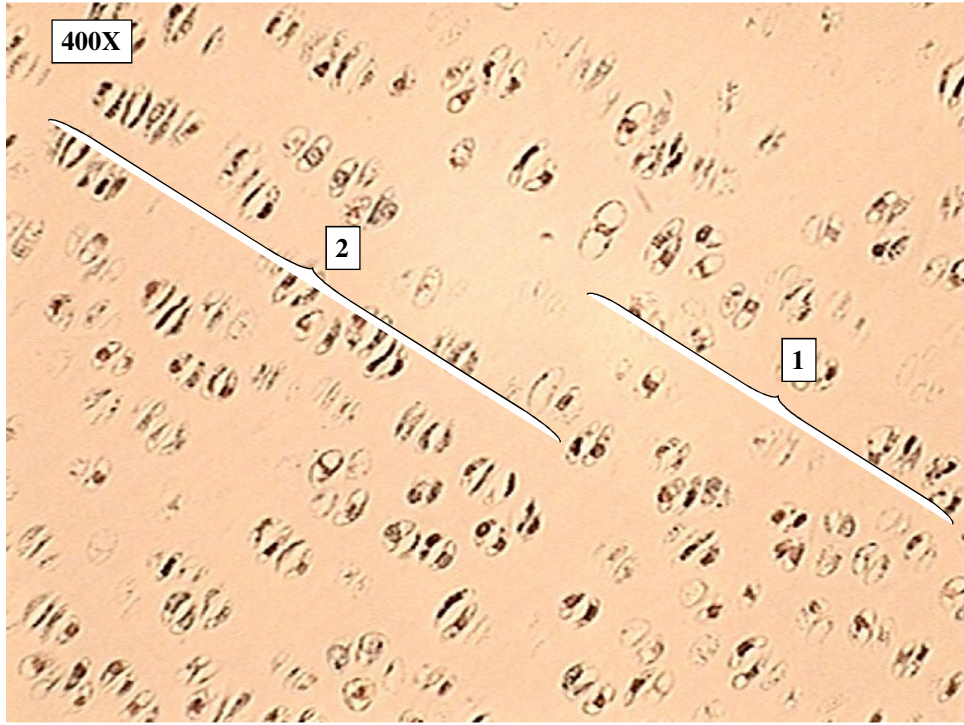
Slides 6-9 Decalcified Bone

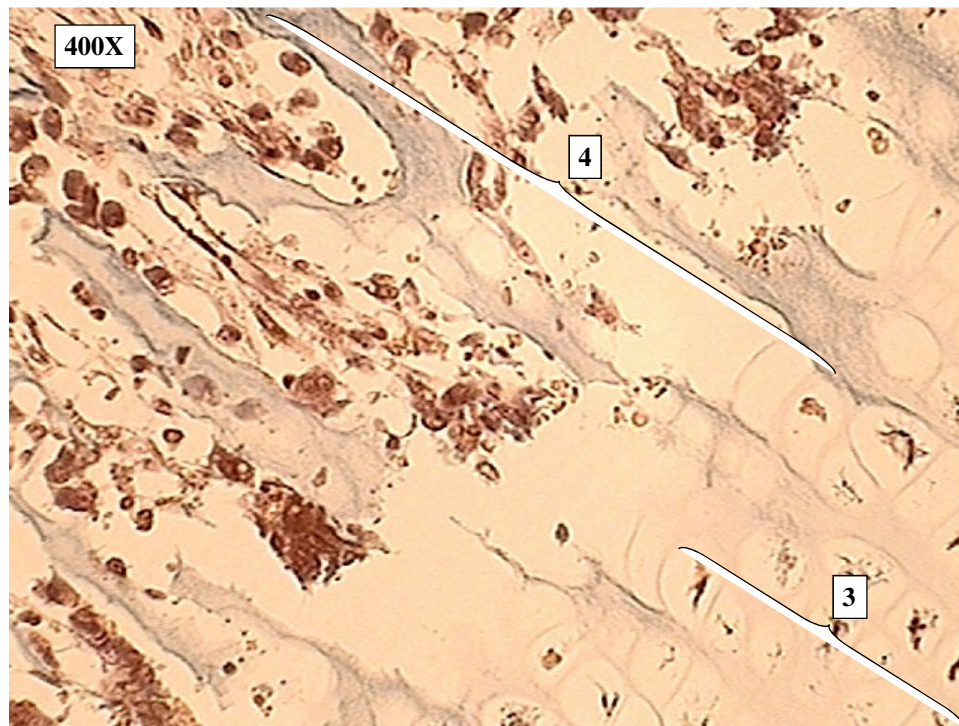
1. Osteon, the basic structural and functional unit of compact bone.
2. Concentric Lamellae, rings of bone matrix surrounding a Central Canal or Haversian canal.
3. Lacuna, space in matrix where osteoblasts or osteocytes are found.
4. Canaliculi, passageways in the matrix for cytoplasmic extensions between osteocytes.
5. Interstitial Lamellae, remnants of osteons whose matrix has been partly recycled by osteoclasts. These lamellae fill in the spaces between osteons.
6. Central Canal or Haversian canal, passageway for blood vessels that provide nutrient to osteocytes.
7. Perforating Canal or Volkmann's canal, passageways for blood vessels that run perpendicular to Central Canals. Conveys blood vessels to deeper osteons.

Slides 6-9 Decalcified Bone

8. Red Bone marrow
9. Periosteum, membrane covering bone containing a outer fibrous layer and an inner cellular layer.
10. Outer Circumferential Lamellae
11. Skeletal muscle associated with the outside of the bone
12. Inner circumferential Lamellae







Slides 12-15 Epiphyseal plate

1. **Zone of Resting cartilage, zone nearest the epiphysis at both the distal and proximal. Note the small scattered chondrocytes and lacuna.**
2. **Zone of Proliferating cartilage, note the stacks of chondrocytes that develop because these chondrocytes undergo mitosis to replace the chondrocytes that die at the diaphyseal side of the epiphyseal plate.**
3. **Zone of Hypertrophic cartilage, note increased size of the chondrocytes and lacuna in this region**
4. **Zone of Calcified cartilage, note that the matrix is staining darker. This is due to calcification of the matrix. Note that chondrocytes are decreased in number due to their death.**